Kookaburra was immediately attacked by all the stilts, causing it to drop the young bird. A close search of this area failed to find the young stilt and it was assumed unhurt.

I was able to pay a brief visit to the locality at daybreak the following day and was fortunate to see three young birds in clear light. They were observed through x 10 glasses and could be clearly seen. They were olive-green, with darker splotches above, with white neck collar, breast and abdomen. Their legs appeared to be unusually long, as did their beaks. When the parent bird became aware of me the young disappeared into long grass.

A further visit on October 15 showed the adult birds and young had left the area. However the young, five in all, were located at B two weeks later. They had grown rapidly and were assuming juvenile plumage. A Whistling Eagle in the area was attacked by the adult stilts and was successfully put to flight.

A second nest site was located at point C. This nest contained four eggs and was successfully photographed. Several pairs were in the vicinity and all became aggressive, or displayed the broken wing reaction.

Further reaction by two pairs of stilts at point D indicated nests in this area, though they were never found. The assumption could be that at least 8 pairs nested in various localities on the lake. Each site was similar—being flooded tussocks of grass, with humps isolated by water. In all cases of nests seen (two in use and one abandoned) they were built on tussocks isolated by water.

The birds' reaction to intruders was four-phased. The first was an aggressive swooping at the intruder, the second a fluttering of wings, with legs dangling as if broken, with the bird uttering a tremulous cry. The third was an actual broken wing display on the ground, and the fourth and most interesting was the bird's apparent settling on a nest, with the ruse being enhanced by the bird dragging grass towards itself.

Apparently this is the first record of stilts nesting on the Swan Coastal Plain. Undoubtedly the unusually heavy rain during mid-winter, and the extensive flooding of surrounding paddocks, created suitable nesting sites for the stilts. Further observations may show that the area could well become a regular nest site.

Nesting during 1968 was not definitely proved. However birds were seen at B by Mr. Tom Spence who thought that at least one pair was nesting. I made further observations but could find no concrete evidence of this. However very young birds and adults were seen frequently.

NOTES ON THE FEEDING HABITS OF SOME WESTERN AUSTRALIAN BIRDS

By C. F. H. JENKINS, M.A.

The following notes on the feeding habits of some Western Australian birds have been prepared from a number of random stomach analyses and some careful observations through high-powered binoculars (x 16). The results indicate that several birds have a much more varied diet than is generally realised and that much still remains to be learned about the feeding behaviour of even our commonest species.

Unless indicated otherwise all specimens were collected by the author.

Whistling Eagle, *Haliastur sphenurus*

This hawk feeds largely on carrion and may often be seen soaring over lakes and estuaries in search of floating food. I was surprised therefore to observe a flock of about 30 Whistling Eagles hawking above the Old Coast Road, about ten miles south of Mandurah. They were swooping and turning as they used their talons to capture large flying ants *(Camponotus* sp.) which were then transferred to the bill and eaten in mid-air.

With the aid of binoculars it was possible to see the birds capture numerous ants, the identity of which was checked by taking samples near ground level from the widespread swarm.

Many of the smaller hawks are known to eat insects, but only once previously have I seen them being caught in flight. The other occasion concerned a Brown Hawk *(Falco berigora)* at Southern Cross, where the bird flew only a few feet above the ground using its talons to capture flying grasshoppers *(Austroicetes cruciata).*

Australian Bustard, *Eupodotis australis*

Ord River Station, E. Kimberley, June 1944.

Stomach crammed with straw-coloured phasmatids.

Eastern Curlew, *Numenius madagascariensis*

The recorded diet of this bird includes crabs, molluscs and other small marine creatures (Lea and Gray, 1935), but I was interested to see a curlew last summer patrolling the grassed margin of Monger's Lake (eastern side), catching grasshoppers. A local resident reported that two birds had been observed in the area for several days.

King Parrot, *Purpureicephalus spurius*

The natural food of this parrot includes the seeds of the Marri or Red gum *(Eucalyptus calophylla)* and the *Casuarina,* but it has also learned to appreciate cultivated nuts and fruits. Like the Twenty-eight, the King Parrot occasionally takes insect food, as birds were observed through binoculars taking lerp insects (Psyllidae) from the leaves of a jarrah tree *(E. marginata)* at Mundijong. The leaves were not removed from the tree, but the parrot gently ran each leaf between its mandibles, scraping the insects off in the process. It is probable that the parrot was more interested in the sugary tests covering the lerps than the tiny insects beneath.

Twenty-eight Parrot, *Barnardius zonarius*

The natural diet of the Twenty-eight Parrot includes the pulp of green eucalypt capsules and various native seeds, but it has also learned to appreciate a wide range of cultivated crops, such as wheat, almonds, apples, pears, apricots, plums and peaches. Some rather unexpected articles of diet include Guildford grass *(Romulea rosea)* corms, capeweed *(Cryptostemma calendula)* leaves and the grub stage of the sawfly *(Perga* sp.). A pair of Twenty-eights at Mundijong was observed with binoculars at quite short range, pulling up Guildford grass corms from the moist ground. Numerous outer husks of the corms were found lying on the ground after the birds had flown away. During the same period the birds were seen eating several small leaves (about two inches in length) of capeweed.

The incident involving the sawfly grubs occurred at Yanchep Park where two parrots were feeding in a clump of Tuart *(Eucalyptus gomphocephala)* seedlings. One parrot was taking black *Solanum* berries, but the other was seen to be eating what looked like caterpillars. The insects were held in one foot while being eaten and it was possible with binoculars to see the body juices dripping from the parrot's beak. The identity of the sawfly larvae was verified by examining insects still remaining on the foliage after the parrots had flown away.

Narrow-billed Bronze Cuckoo, *Chrysococcyx basalis*

1. Collected by L. J. McHugh, West Perth, found dead in street, 23/11/46. Four small hairy caterpillars. Two small hard fruits in a felty covering.

2. Collected by D. L. Serventy at the 30 mile peg Perth/Bunbury Road 3/9/46. Three small very hairy caterpillars (stomach wall felted with hairs).

Tawny Frogmouth, *Podargus strigoides*

The feeding habits of the Frogmouth have been discussed in some detail by Serventy (1936), and his summary indicates clearly that night flying insects figure little in the diet of this nocturnal bird and that most of its prey is caught on the ground. A puzzling feature about the insects listed from many Frogmouth stomachs is the high proportion of Orthoptera (grasshoppers crickets, etc.). Almost all members of this group are protectively coloured and even those species such as crickets, which are active at night, would be very difficult to see.

In February 1968 I found a dead Frogmouth, apparently killed by a motor car, near the Kent Street weir at Cannington. The stomach content consisted entirely of two species of cryptically coloured insects—the Long-headed Grasshopper *(Acrida conica)* and the Yellow-winged Locust (*Gastrimargus musicus)*. The road verge and neighbouring paddock were overgrown with kikuyu grass and paspalum, and no doubt supported a high population of grasshoppers, but the species in question are normally inactive at night and it is difficult to explain how such highly camouflaged insects would be caught in the dark or even in the early evening.

The bizarre suggestion (Gilliard, 1958a) that the open bill of the Frogmouth with its coloured interior may simulate a flower and so attract insects requires, as Gilliard states, "further confirmation," but even if verified this would not explain the capture of protectively coloured grasshoppers. Further observations may perhaps show that hearing is important to *Podargus* as well as vision, as various nocturnal birds, including owls and oil birds *(Steatornis caripensis)*, have acute hearing. Experiments have shown that the Barn Owl *(Tyto alba)* is capable of catching a mouse in complete darkness (Gilliard, 1958b).

Black-faced Cuckoo-Shrike, *Coracina novae-hollandiae*

1. Collected by A. Robinson, Coolup, 15/3/44. Ants 22, Lepidoptera 1, scarab beetle 1, spider 1, Hymenoptera other than ants 20.

2. La Grange W. Aust., June 1944. Weevils 10, mantid 1, eggs of orthoptera 24.

3. A. Robinson, Coolup, 18/12/43. *Catasarcus rufipes* (Curculionidae) 6.

Little Cuckoo-Shrike, *C. robusta*

Carlton Reach Station, E. Kimberley, June 1944. Tettigoniidae 3, Acrididae 2, weevils 2, unidentifiable insect remains.

White-winged Triller, *Lalage sueurii*

Collected by A. Robinson, Coolup, 23/2/44. ♀ Hairy caterpillars 4, small metallic wasps 2.

Blue and White Wren, *Malurus leuconotus*

North-West Cape, August 1946. Several small bugs (Heteroptera) and unidentifiable chitinous particles.

Lemon-breasted Flycatcher, *Microeca flavigaster*

Ivanhoe Station, E. Kimberley, May 1944. ♀ One small blue lady-bird, 20 small ants, small quantity of unidentifiable chitinous particles.

Great Bower-bird, *Chlamydera nuchalis*

Carlton Reach Station, E. Kimberley, May 1944.

1. Ants 240, weevils 3.
2. Ants 147, weevil 1, fibrous remains of native fruits.

GROUP FEEDING

Following a severe storm at Mandurah in July 1965 I was attracted by a mixed assembly of birds associated with piles of seaweed in a backwater near the mouth of the estuary.

The main seaweed piles, the adjacent water and floating rafts of weed, were seething with kelp-fly maggots (Coelopidae) and presented a banquet which few insect-feeding creatures could resist.

Competing with the Silver Gulls *(Larus novae-hollandiae)* and Crested Terns *(Sterna bergii)* along a fifty yard stretch of weed and within range of the flying spray were a dozen Willie Wagtails *(Rhipidura leucophrys)*, some twenty Australian Pipits *(Anthus novae-seelandiae)*, fifty Swallows *(Hirundo neoxena)*, and several pairs of Red-capped Dotterels *(Charadrius alexandrinus)*. The gulls and terns dabbed on the water or pecked on the weed for the food, the pipits and dotterels kept to the drier patches and the wagtails took toll of both maggots and adults. The swallows confined their attentions to the flying insects which swarmed over the area.

Although not interested in the actual maggots, several Pied Shags *(Phalacrocorax varius)* were also present feeding on the fish which were swimming amongst the maggoty weed.

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